GA-9IVDT

Dual Xeon™ (Nocona/Iwindale)

Processor Motherboard

USER'S MANUAL

Dual Xeon™ (Nocona/Iwindale)Processor Motherboard

Rev. 1102

12ME-9IVDT-1102

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Item Checklist

- ☑ The GA-9IVDT motherboard
- ☑ Printer Port (LPT) cable x 1
- ☑ IDE to SATA HDD Power cable x 2
- ☑ CD for motherboard driver & utility
- ☑ I/O Shield x1
- ☑ Serial ATA cable x 4
- ☑ PATA (1 cables) & FDD cable set x 1
- ☑ GA-9IVDT quick installation guide
- ☑ GA-9IVDT user's manual
- ☑ Retention Module x 2

WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

Chapter 1 Introduction

Features Summary

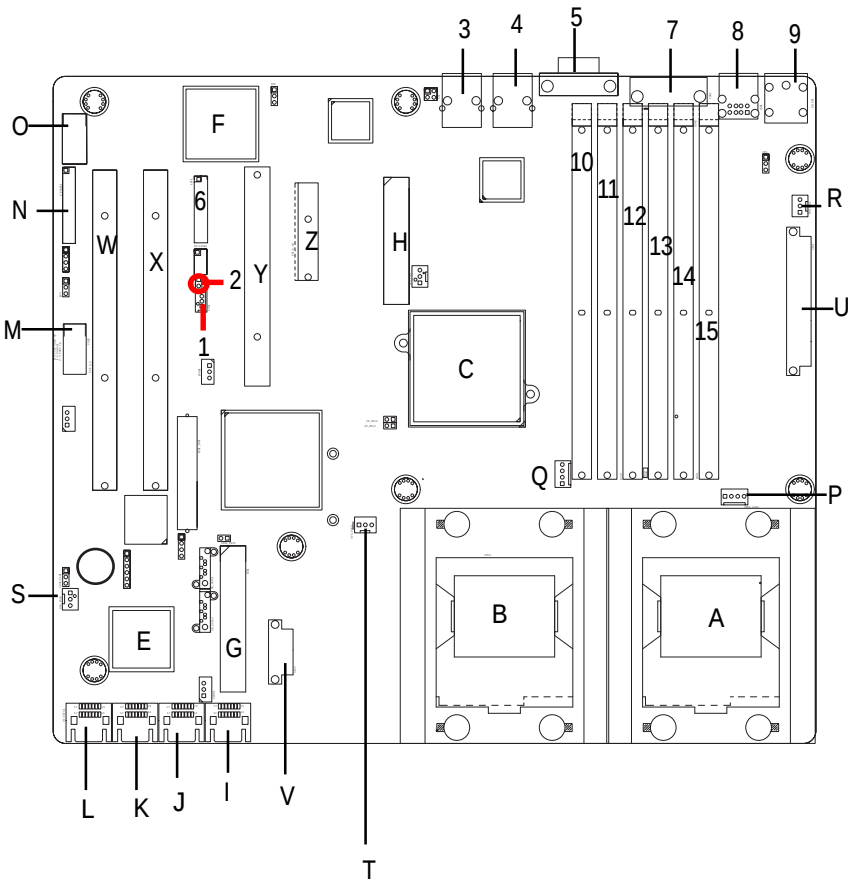
Form Factor	• 12cm x 10.5cm CEB size form factor, 8 layers PCB.
Motherboard	• GA-9IVDT Motherboard:
CPU	• Dual socket 604 for Intel® Xeon(Nocona/Iwindale) processor suopprts 3.6 GB and upper • Intel® Xeon (Nocona/Irwindale) CPUs supports 800 MHz FSB • L2 cache depend on CPU
Chipset	• Intel® E7320 Chipset • Intel® 6300ESB
Memory	• 6 x 240-pin DDRII DIMM sockets • Supports 6 ECC Registered DIMM DDRII 400 • Supports up to 12 GB DRAM • Supports only 1.8V DDRII DIMM
I/O Control	• ITE® ITE IT8712 with HW Monitor
Slots	• 2 PCI-X slot support 64/66MHz (3.3V / The Green slot supports ZCR) • 1 PCI slot supports 32/33MHz (5V) • 1 PCI-E slot by x4
On-Board IDE	• 1 IDE bus master (ATA100) IDE ports for up to 2 ATAPI devices
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes. • 1 Parallel port supports Normal/EPP/ECP mode • 1 Serial port (COM) • 4 x USB 2.0 (2 X at rear, 2 x by cable) • 1 x VGA port • 2 x RJ45 LAN port
Hardware Monitor	• CPU/Power/System Fan Revolution Detect • CPU shutdown when overtemperature • System Voltage Detect

SATA Controller	• Adaptec® AIC-8130 chipset supports SATAII 4 ports • Supports RAID 0 ,1, 5, 10 with ZCR card (2020s) • Supports HOST RAID (RAID 0,1) • Mirroring supports automatic background rebuilds • Features LBA and Extended Interrupt 13 drive translation in controller onboard BIOS
On-Board SATA RAID	• Adaptec® AIC-8130 chipset supports SATAII interface • Build in Intel® 6300ESB chipset • RAID 0,1,5,10 are supported when ZCR card is populated. (Optional)
On-Board LAN	• Broadcom® BCM 5705 and 5721 LAN Chipset
On-Board USB 2.0	• Built in 6300ESB Chipset
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	• Lincensed Pheonix on 8MB Flash RAM • Supports multi boot function • User setting for hardware monitoring • Supports PXE
Additional Features	• Wake on LAN (WOL) • AC Recovery • Poly fuse for keyboard over-current protection

NOTE!

Please ensure that you have update SP1 when running Windows Server 2003. Failure to do so will cause the low LAN transfer rate.

GA-9IVDT Motherboard Layout



A.	CPU1 (Install First)	1.	WOL1 (Wake on Lan)
B.	CPU2	2.	WOR1 (Wake on Ring)
C.	Intel E7320	3.	G_LAN2 (LAN1 Port)
D.	Intel 6300ESB	4.	G_LAN1 (LAN2 Port)
E.	Adaptec AIC-8130	5.	VGA1 (VGA Port)
F.	ATI Rage_XL	6.	LPT Connector
G.	IDE1	7.	COM1 (COM Port)
H.	FDD1 (Floppy Connector)	8.	USB1 (USB2.0 port)
I.	MV_SATA4 (** Note)	9.	KB_MS (Keyboard & Mouse)
J.	MV_SATA3 (** Note)	10.	DDR6
K.	MV_SATA2 (SATA Connector)	11.	DDR5
L.	MV_SATA1 (SATA Connector)	12.	DDR4
M.	USB2 (USB2.0 connector)	13.	DDR3
N.	F_Panel1(Front Panel)	14.	DDR2
O.	COM2	15.	DDR1
P.	CPU_FAN1		
Q.	CPU_FAN2		
R.	PWR_FAN1 (Power Fan)		
S.	SYS_FAN2 (System Fan)		
T.	SYS_FAN3 (System Fan)		
U.	ATX1Power connector)		
V.	ATX2 (Power connector)		
W.	PCI-X_2 (ZCR Slot)		
X.	PCI-X_1		
Y.	PCI1		
Z.	PCI_E_x4 (PCI-E x4 Slot)		

** Note: This device is reserved for Adaptec AIC-8140 chipset. (Supports 8 SATAports)

Chapter 2 Hardware Installation Process

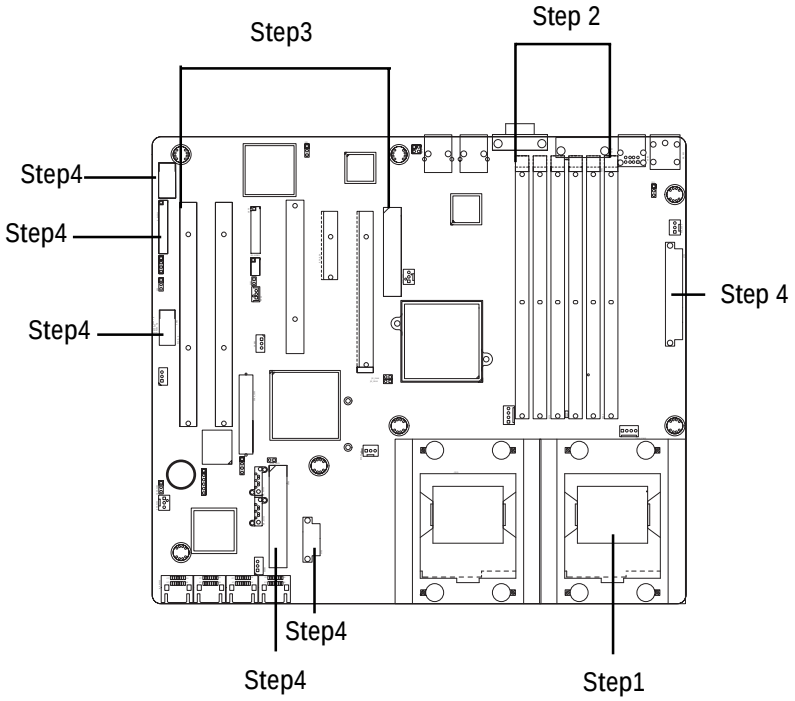
To set up your computer, you must complete the following steps:

Step 1- Install the Central Processing Unit (CPU)

Step 2- Install memory modules

Step 3- Install expansion cards

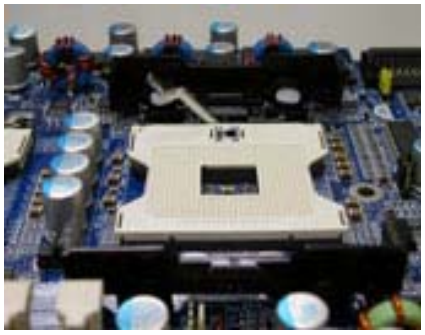
Step 4- Connect ribbon cables, cabinet wires, and power supply



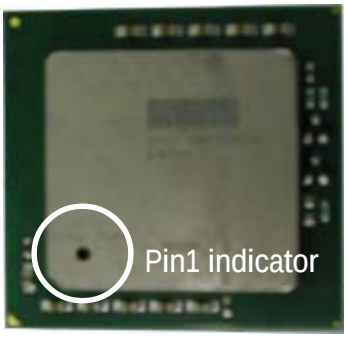
Step 1: Install the Central Processing Unit (CPU)

Before installing the processor , adhere to the following warning:

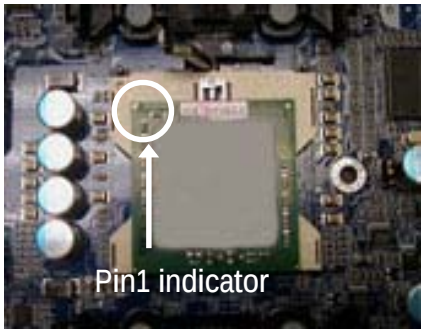
If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation. Please make sure the CPU type is supported by the motherboard.



1. Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise “cough” made.



2. CPU Top View



3. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

4. Press down the CPU socket lever and finish CPU installation.

Step 1-2:CPU Heat Sink Installation

Before installing the CPU Heat Sink , adhere to the following warning:

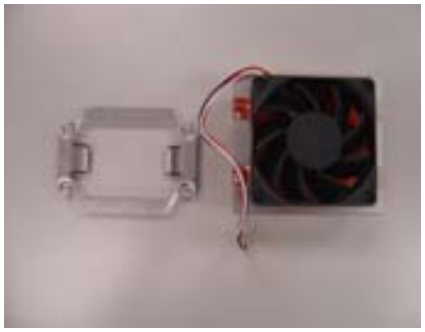
1.Please use Intel approved cooling fan.

2.We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink.

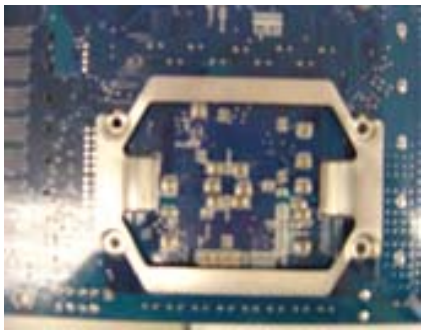
(The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)

3.Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.

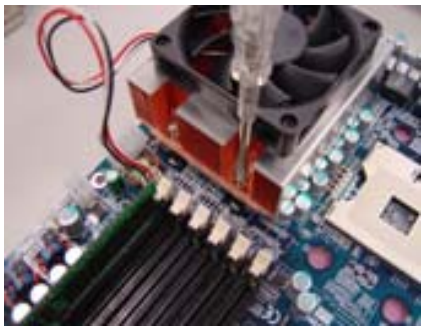
Please refer to CPU heat sink user's manual for more detail installation procedure.



1. Heat sink installation kit.



2. Turn the mother bord to the backside. Lock the retention module on the mother board
   Make sure the position of the 4 holes on the retention module match exactly the position on the motherboard.

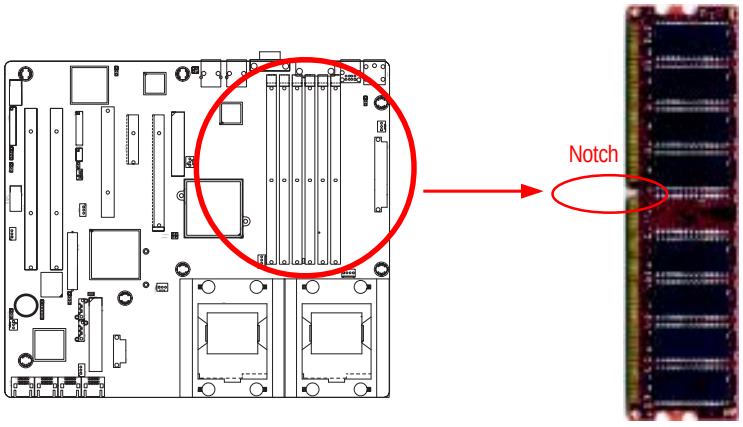


3. Fasten the heatsink supporting-base onto the CPU socket on the mainboard.

4. Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

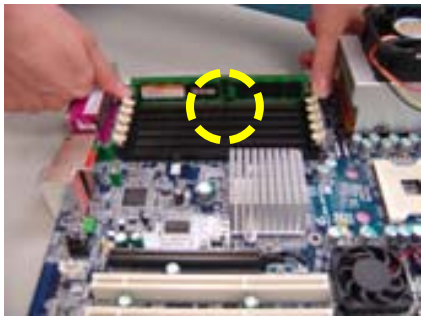
Step 2: Install memory modules

CAUTION Before installing the processor and heatsink, adhere to the following warning:
When DIMM LED is ON, do not install/remove DIMM from socket.
Please note that the DIMM module can only fit in one direction due to the one notches. Wrong orientation will cause improper installation. Please change the insert orientation.
The motherboard has 6 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket .The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

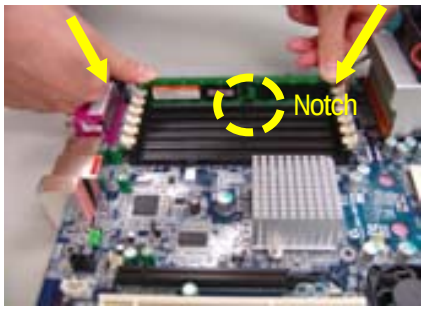


DDR

1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.



2. Insert the DIMM memory module vertically into the DIMM slot. Then push it down.
   Please note that DIMM must be populated in order starting at the nearest slot from the ATX power.



3. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
   Reverse the installation steps when you wish to remove the DIMM module.

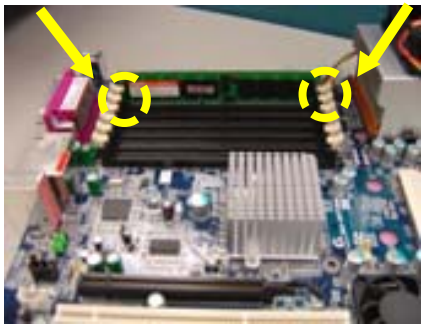


Table 1. Supported DIMM Module Type

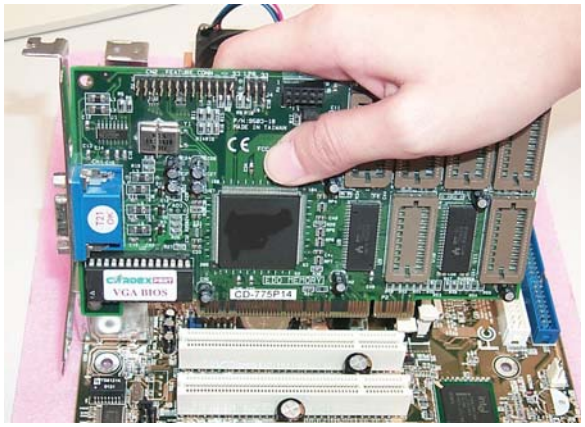
Technology	Organization	SDRAM Chips/DIMM
256MB	8MB x 8 x 4 bks	8
	16MB x 4 x 4bks	16
512MB	16MB x 8 x 4bks	8
	32MB x 4 x 4bks	16
1GB	32MB x 8 x 4bks	8
	64MB x 4 x 4bks	16

Table 2. DIMM Placement DDR2-400

DIMM Configuration	DIMM1	DIMM2	DIMM3
1 Single Rank	Empty	Empty	Single Rank
1 Dual Rank	Empty	Empty	Dual Rank
2 Single Rank	Empty	Single Rank	Single Rank
1 Dual Rank, 1 Single Rank	Empty	Single Rank	Dual Rank
2 Dual Rank	Empty	Dual Rank	Dual Rank
3 Single Rank	Single Rank	Single Rank	Single Rank
1 Dual Rank, 2 Single Rank	Single Rank	Single Rank	Dual Rank

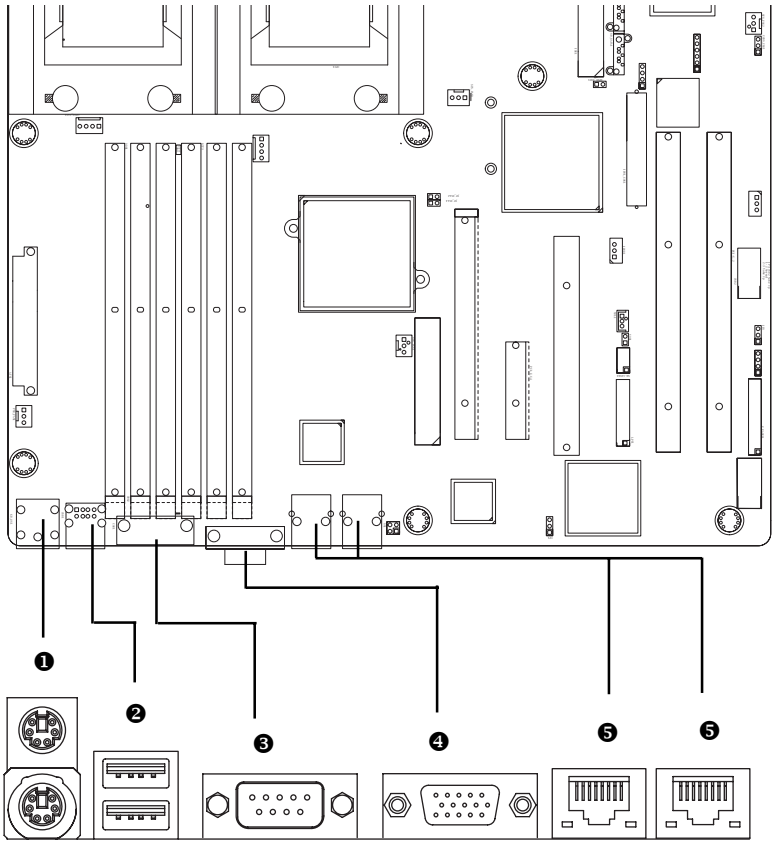
Step 3: Install expansion cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your server's chassis cover, necessary screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.



Step 4: Connect ribbon cables, cabinet wires, and power supply

Step 4-1 : I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

❷ USB port

Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. have a standard USB interface.
Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

❸/❹ Serial Port / VGA Port

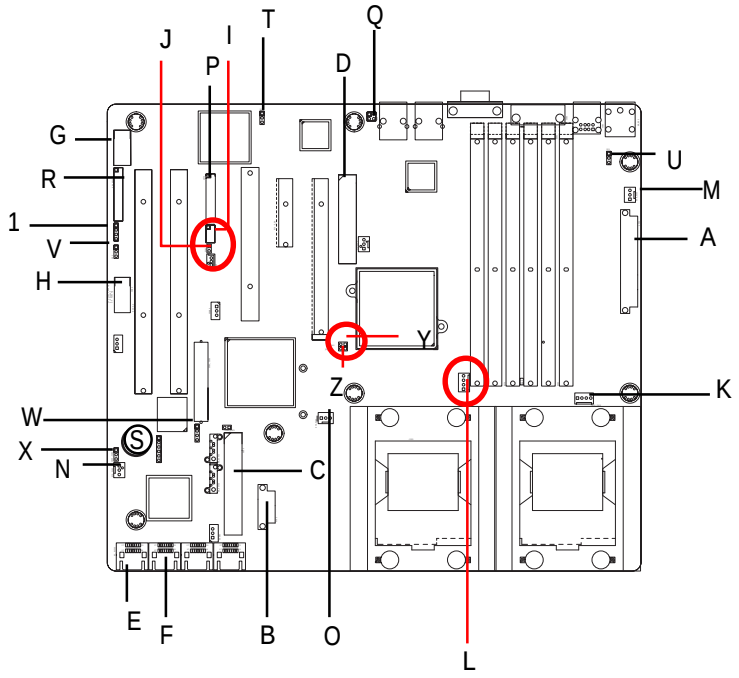
This connector supports 1 standard COM port. Device like mouse and modem etc can be connected to Serial port.

❺ LAN1/2 Port

The provided Internet connection is Gigabit Ethernet, providing data transfer speeds of 10/100/1000Mbps.

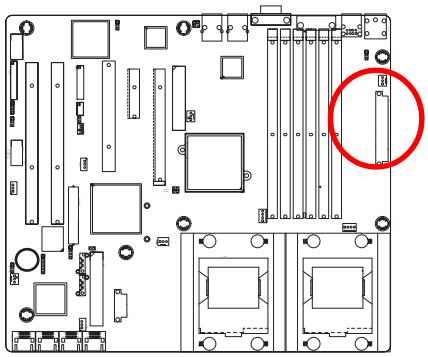
LAN Port	Status	Description
LAN	Yellow LED On	GIGALAN connected
	Green LED On	GIGALAN at Speed 10/100MB
	Green LED Blinking	Data Transfer

Step 4-2 :Connectors and Jumper Setting Introduction



A) ATX1	O) SYS_FAN3
B) ATX2	P) LPT1
C) IDE1	Q) ID_SW1
D) FDD1	R) F_Panel
E) MV_SATA1	S) BAT1 (Battery)
F) MV_SATA2	T) JP1
G) COM2	U) JP2
H) USB2	V) JP3
I) WOR1	W) JP4
J) WOL1	X) CMOS_CLR1
K) CPU_FAN1	Y) JP_PLL1
L) CPU_FAN2	Z) JP_PLL2
M) PWR_FAN1	1) JP_SPK1
N) SYS_FAN2	

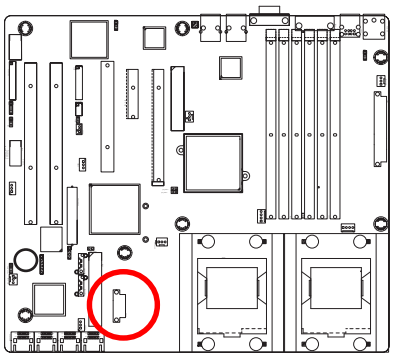
A) ATX 1 (ATX Power Connector)



➢ AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

PIN No.	Definition
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POK
9	5VSB
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	GND
16	PSON
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND

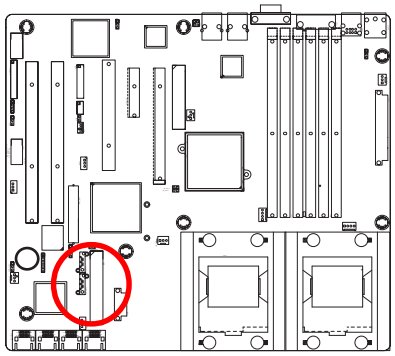
B) ATX2 (ATX Power Connector)

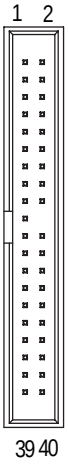


Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	P12V_CPU0
6	P12V_CPU0
7	P12V_CPU1
8	P12V_CPU1

C) IDE1 Connector

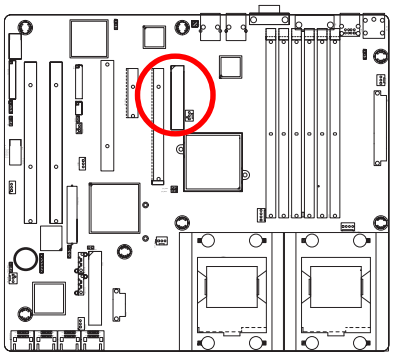
Please connect first harddisk to IDE1. The red stripe of the ribbon cable must be the same side with the Pin1.

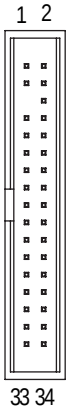




D) FDD1 (Floppy Connector)

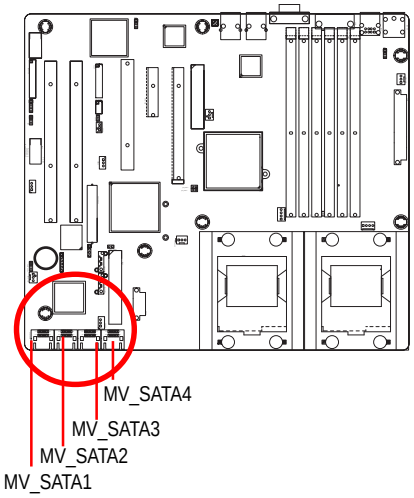
Please connect the floppy drive ribbon cables to FDD. It supports 360K,720K,1.2M,1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.





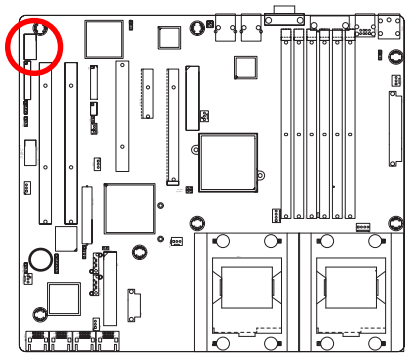
E / F) MV_SATA1/SATA2/SATA3SATA4 (Serial ATA Connectors)

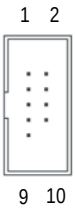
You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).



Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

G) COM2

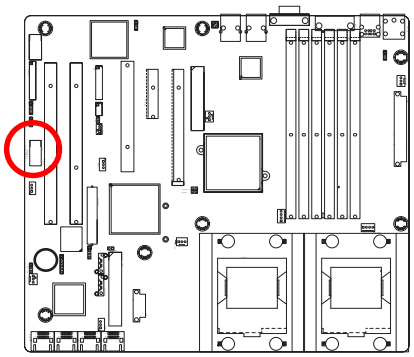


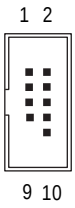


Pin No.	Definition
1	DCD#2
2	SIN2
3	SONT2
4	DTR#2
5	CGND
6	DSR#2
7	RTS#2
8	CTS#2
9	RI#2
10	NC

H) USB2 (Front USB Connector)

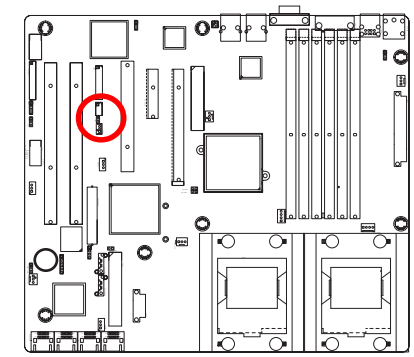
Be careful with the polarity of the front USB connector. Check the pin assignment while you connect the front USB cable. Please contact your nearest dealer for optional front USB cable.

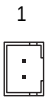




Pin No.	Definition
1	Power
2	Power
3	USB Dx-
4	USB Dy-
5	USB Dx+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	OC

I) WOR1 (Wake on Ring)

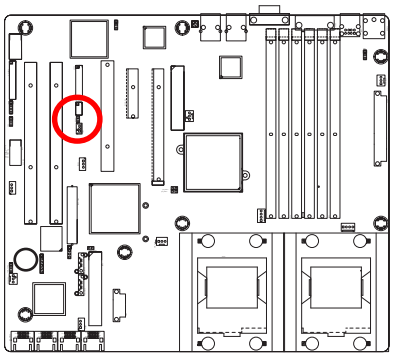




Pin No.	Definition
1	Signal
2	GND

J) WOL1 (Wake on LAN)

This connector allows the remove servers to manage the system that installed this mainboard via your network adapter which also supports WOL.

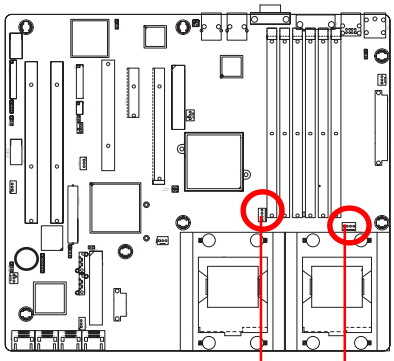


1

Pin No.	Definition
1	Signal
2	GND
3	+5VSB

K / L) CPU_FAN1 /2 (CPU Fan Connector)

Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating.The CPU fan connector supports Max. current up to 1A .



CPU FAN 1

1

1

CPU FAN 2

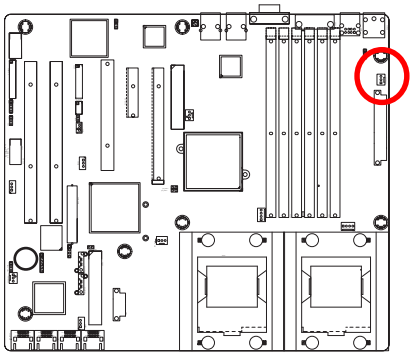
Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Control

CPU FAN 1

CPU FAN 2

M) PWR_FAN1 (Power Fan Connector)

This connector allows you to link with the cooling fan on the system case to lower the system temperature.

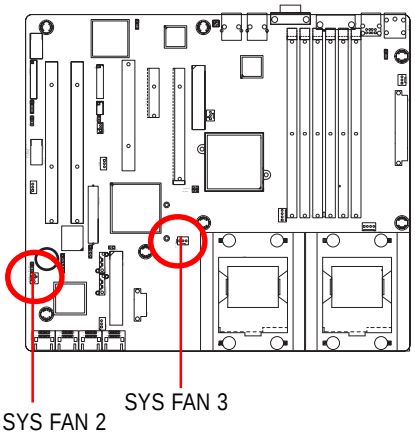


1

Pin No.	Definition
1	GND
2	+12V
3	Sense

N / O) SYS_FAN 2 / 3 (System Fan Connector)

This connector allows you to link with the cooling fan on the system case to lower the system temperature. These connectors are for system use only.



1

SYS FAN 2

Pin No.	Definition
1	GND
2	12V
3	Sense

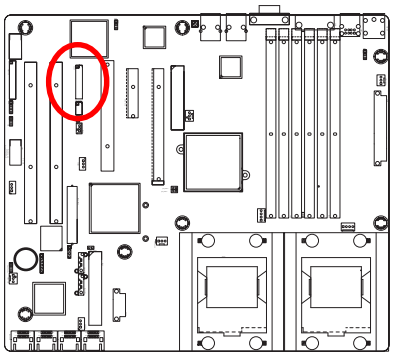
1

SYS FAN 3

Pin No.	Definition
1	GND
2	12V
3	Sense

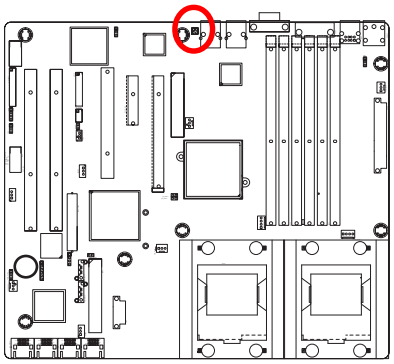
P) LPT1

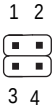
☞Please connect the printer device via this connector.



Pin No.	Definition
1	LPD STB-
2	LPD_AFD-
3	LPD_0
4	LPD_ERR-
5	LPD_1
6	LPD_INIT-
7	LPD_2
8	LPD_SLIN-
9	LPD_3
10	GND
11	LPD_4
12	GND
13	LPD_5
14	GND
15	LPD_6
16	GND
17	LPD_7
18	GND
19	LPD_ACK-
20	Pin removed
21	LPD_BUSY
22	Pin Removed
23	LPD_PE
24	GND
25	LPD_SLCT
26	GND

Q) ID_SW1 (ID Switch)

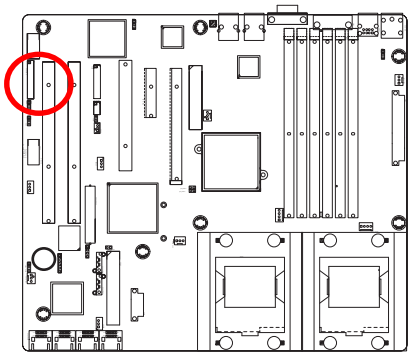




Pin No.	Definition
1	P5V_DUAL(+)
2	ID_LED(-)
3	IPMI_IDSW
4	GND

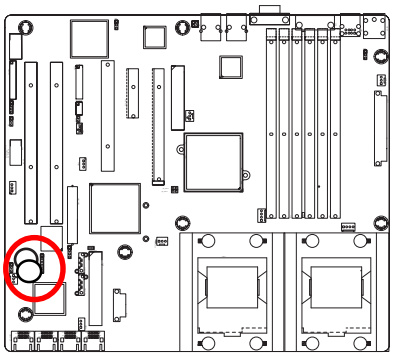
R) F_Panel1 (2 x 12 pins connector)

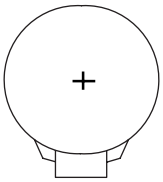
☞Please connect the power LED, PC speaker, reset switch and power switch of your chassis front panel to the F_PANEL connector according to the pin assignment above.



Pin No	Signal Name	Description
1	PWR_LED+	Dual Color LED (+/-) / Single Color LED (-)
2	5VSB	P5VStand By Power (Reserverd)
3	Key	Pin Removed
4	ID_LED+	ID LED Signal anode (+)
5	PWR-	Dual Color LED (-/+) / Single Color LED (+)
6	ID_LED-	ID LED Signal cathode(-)
7	HD+	Hard Disk LED Signal anode (+)
8	F_SYSRDY	System Fan Fail LED Signal anode (+)
9	HD-	Hard Disk LED Signal cathode(-)
10	SYS_STATUS-	System Status LED Signal cathode(-)
11	PWB+	Soft Power connector anode (+)
12	LAN1_ACT	LAN1 access LED Signal
13	PWB+ GND	Soft Power connector Ground
14	L1_LINK-	LAN1 linked LED Signal cathode(-)
15	RST_BTN-	Reset button cathode(-)
16	SENSOR_SDA	SMBus Data
17	RST_BTN_GND	Reset Button GND
18	SENSOR_SCL	SMBus Clock
19	SV_SW-	Service ID LED Switch
20	CASE_OPEN#	Case Open Signal
21	SV_SW- (GND)	Service ID LED Switch GND
22	LAN2_ACT	LAN2 access LED Signal
23	NMI_SW-	NMI Switch cathode(-)
24	L2_LINK-	LAN2 linked LED Signal cathode(-)

S) BAT1 (Battery)



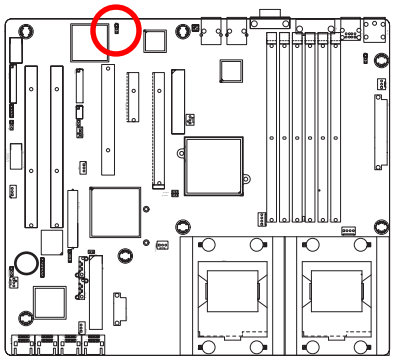


CAUTION

- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS...
1.Turn OFF the computer and unplug the power cord.
2.Remove the battery, wait for 30 second.
3.Re-install the battery.
4.Plug the power cord and turn ON the computer.

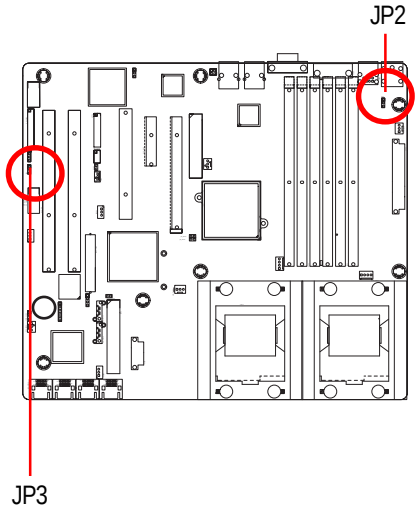
T) JP1 (Onboard VGA Enable/Disable Function)



1 1-2 close: Enable VGA function (Default)

1 2-3 close: Disable VGA function

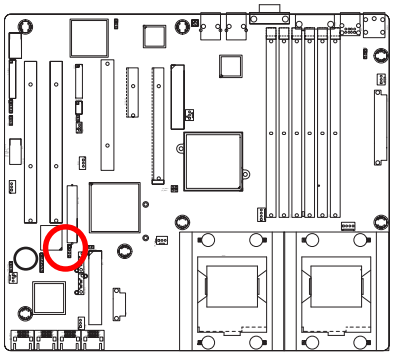
U / V) JP2/JP3 (USB Wake Up Function)



1 1-2 close: Normal (Default)

1 2-3 close: Enable USB wake-up function

W) JP4 (BIOS Write Protect Setting Jumper)



1-2 close: Top Block Lock (Default)

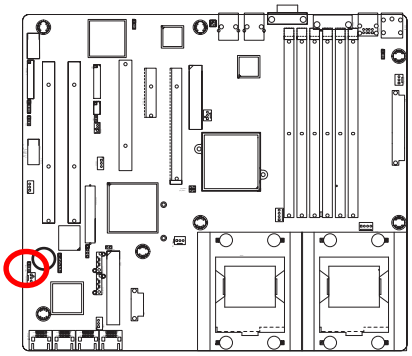
3-4 close: 2-8 Block Lock

Open: All blocks write enabled

X) CLR_CMOS (Clear CMOS Function)

You may clear the CMOS data to its default values by this jumper.

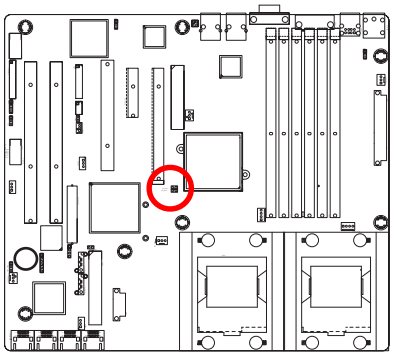
Default value doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.



1 1-2 close: Clear CMOS

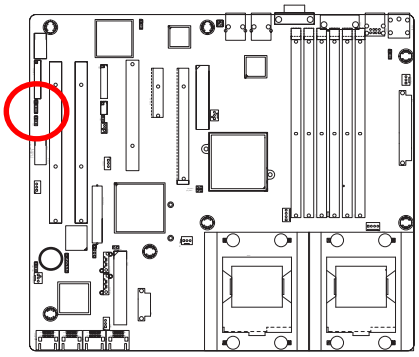
1 2-3 close: Normal (Default)

Y / Z) JP_PLL1/2 (FSB Select Jumper Setting)



CPU FSB / DDR	JP_PLL1	JP_PLL2
133 (533) / DDRII-400	CLOSE	OPEN
200 (800) / DDRII-400	CLOSE	CLOSE

1) JP_SPK1 (External Speaker Jumper)



Pin No.	Definition
1	SPK+
2	NC
3	NC
4	SPK-

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERINGSETUP

Power ON the computer and press <F2> immediately will allow you to enter Setup.

CONTROLKEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F6>	Reserved
<F7>	Reserved
<F8>	Reserved
<F9>	Load the Optimized Defaults
<F10>	Save all the CMOS changes, only for Main Menu

GETTINGHELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

- **Main**

  This setup page includes all the items in standard compatible BIOS.

- **Advanced**

  This setup page includes all the items of AMI special enhanced features.

  (ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

- **Security**

  Change, set, or disable password. It allows you to limit access the system and setup.

- **Server**

  Server additional features enabled/disabled setup menus.

- **Boot**

  This setup page include all the items of first boot function features.

- **Exit**

  There are five optionsin this selection: Exit Saving Changes, Exit Discarding Changes, Load Optimal Defaults, Load Failsafe Defaults, and Discard Changes.

Main

Once you enter Phoenix BIOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

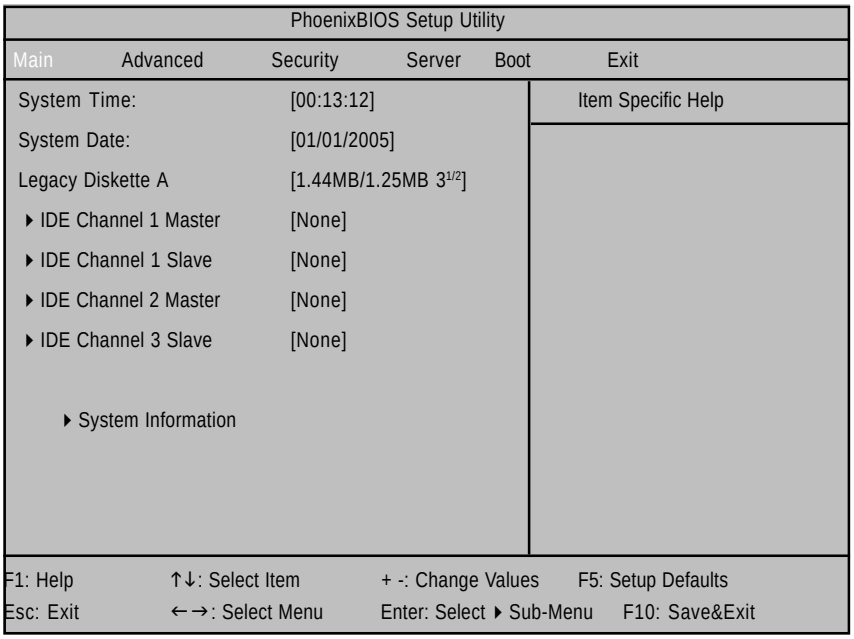

PhoenixBIOS Setup Utility
Main Advanced Security Server Boot Exit
System Time: [00:13:12]
System Date: [01/01/2005]
Legacy Diskette A [1.44MB/1.25MB 3 1/2]
IDE Channel 1 Master [None]
IDE Channel 1 Slave [None]
IDE Channel 2 Master [None]
IDE Channel 3 Slave [None]
System Information
Item Specific Help
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults
Esc: Exit ←→: Select Menu Enter: Select ▸ Sub-Menu F10: Save&Exit

Figure 1: Main

☞ System Time

The time is calculated based on the 24-hour military time clock. Set the System Time (HH:MM:SS)

☞ System Date

Set the System Date. Note that the "Day" automatically changed after you set the date.
(Weekend: DD: MM: YY) (YY: 1099~2099)

Legacy Diskette A

This category identifies the type of floppy disk drive A that has been installed in the computer.

Disabled	Disable this device.
360KB, $5^{1/4}$ in.	$3^{1/2}$ inch AT-type high-density drive; 360K byte capacity
1.2MB, $3^{1/2}$ in.	$3^{1/2}$ inch AT-type high-density drive; 1.2M byte capacity
720K, $3^{1/2}$ in.	$3^{1/2}$ inch double-sided drive; 720K byte capacity
1.44M, $3^{1/2}$ in.	$3^{1/2}$ inch double-sided drive; 1.44M byte capacity.
2.88M, $3^{1/2}$ in.	$3^{1/2}$ inch double-sided drive; 2.88M byte capacity.

Note: The 1.25MB,$3^{1/2}$ reference a 1024 byte/sector Japanese media format. The 1.25MB,$3^{1/2}$ diskette requires 3-Mode floppy-disk drive.

IDE Channel 0 Master, Slave / Channel 1 Master, Slave, Serial ATA

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

- TYPE

1-39: Predefined types.

Users: Set parameters by User.

Auto: Set parameters automatically. (Default Vaules)

CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.

ATAPI Removable: Removable disk drive is installed here.

- Multi-Sector Transfer

This field displays the information of Multi-Sector Transfer Mode.

Disabled: The data transfer from and to the device occurs one sector at a time.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

LBA Mode	This field shows if the device type in the specific IDE channel support LBA Mode.
32-Bit I/O	Enable this function to max imize the IDE data transfer rate.
Transfer Mode	This field shows the information of Teansfer Mode.
Ultra DMA Mode	This filed displays the DMA mode of the device in the specific IDE channel.

System Information

This category includes the information of Processor Type, Speed, Extended memory, BIOS Version, BIOS Date, System Product Name, System serial number, System version, System UUID, Main Board ID, and Main Board Serial number.

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for basic operation. User can change the processor options, chipset configuration, PCI configuration and chipset control.

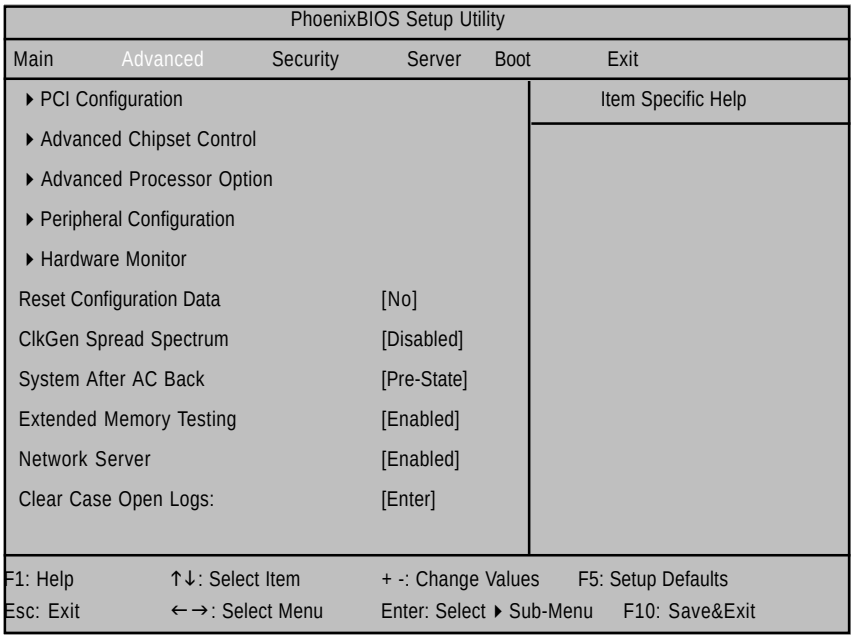

PhoenixBIOS Setup Utility
Main Advanced Security Server Boot Exit
PCI Configuration
Advanced Chipset Control
Advanced Processor Option
Peripheral Configuration
Hardware Monitor
Reset Configuration Data [No]
ClkGen Spread Spectrum [Disabled]
System After AC Back [Pre-State]
Extended Memory Testing [Enabled]
Network Server [Enabled]
Clear Case Open Logs: [Enter]
Item Specific Help
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults
Esc: Exit ←→: Select Menu Enter: Select ▸ Sub-Menu F10: Save&Exit

Figure 2: Advanced

PCI Configuration

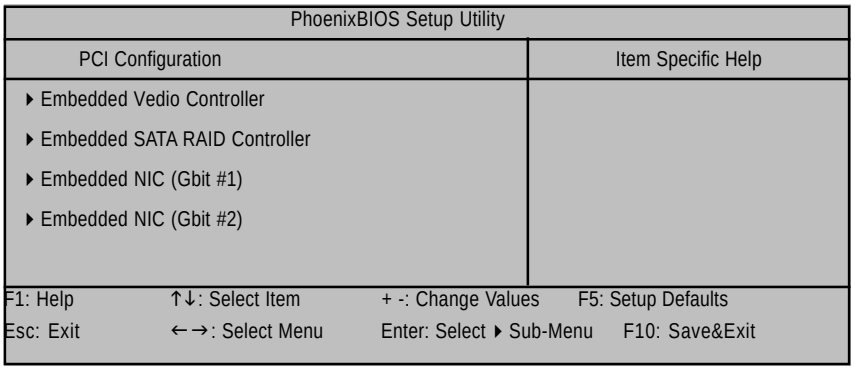


Figure 2-1: PCI Configuration

Embedded Video Controller

- Onboard VGA Control

Enabled	Enable onboard VGA device. (Default value)
Disabled	Disable this function.

Embedded SATA RAID Controller

- Option ROM Scan

Enabled	Enableing this item to initialize device expansion ROM.
Disabled	Disable this function. (Defualt value)

Embedded NIC (Gbit #1 / 2)

- Onboard LAN 1 / 2 Control

Enabled	Enable onboard LAN 1 / 2 device. (Default value)
Disabled	Disable this function.

- Option ROM Scan

Enabled	Enableing this item to initialize device expansion ROM.
Disabled	Disable this function. (Defualt value)

Advanced Chipset Control

PhoenixBIOS Setup Utility		
Advanced Chipset Control		Item Specific Help
USB Controller	[Enabled]	
Legacy USB Support	[Disabled]	
Force Compliance Mode	[Enabled]	
PCI-E port A Device 2	[Enabled]	
PCI-E port A1 Device 3	[Enabled]	
Data Parity Error Recovery	[Enabled]	
Wake On LAN	[Enabled]	
F1: Help	↑↓: Select Item	+ -: Change Values F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▸ Sub-Menu F10: Save&Exit

Figure 2-2: Advanced Chipset Control

☞USB Controller

This item allows users to enable or disable the USB device by setting item to the desired value.

- ⏩Enabled Enable USB controller. (Default value)
- ⏩Options Disbale this function.

☞Legacy USB Support

This option allows user to function support for legacy USB.

- ⏩Enabled Enables support for legacy USB.
- ⏩Disabled Disables support for legacy USB. (Default Value)

Force Compliance Mode

This option allows user to function PCI-E Compliance mode by setting item to desired value.

Enabled	Enables PCI-E Force Compliance mode. (Default Value)
Disabled	Disables this function.

PCI-E port A Device 2

Force PCI Express v1.0 Compability Mode, this PCI-E port A by setting to desired value.

Auto	Set this function to Auto.
Force PCI Express 1.0	Force PCI Express v1.0 Compability Mode.
Enabled	Enables PCI-E port A Device2 (Default Value)
Disabled	Disables this function.

PCI-E port A 1 Device 3

Force PCI Express v1.0 Compability Mode, this PCI-E port A1 by setting to desired value.

Auto	Set this function to Auto.
Force PCI Express 1.0	Force PCI Express v1.0 Compability Mode.
Enabled	Enables PCI-E port A1 Device 3. (Default Value)
Disabled	Disables this function.

Data Parity Error Recovery

Enabled	Enable data parity error recovery function. (Default vaules)
Disabled	Disable this function.

Wake On LAN

This option allow user to determine the action of the system when a LAN wake up occurs.

Enabled	Enable Wake On LAN. (Default value)
Disabled	Disable this function.

Note: This item must enabled if you're running under Windows operating system.

Advanced Processor Option

PhoenixBIOS Setup Utility			
Advanced Processor Option			Item Specific Help
Hyper Threading Technology	[Enabled]		
Thermal Management 2	[Disabled]		
Adjacent Cache Line Prefetch	[Enabled]		
Set Max Ext CPUID = 3	[Disabled]		
F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 2-3: Advanced Processor Option

Hyper Threading Technology

- Enabled — Enables Hyper-Threading Technology Feature when using Windows XP and Linux 2.4x operating systems that are optimized for Hyper-Threading technology. (Default value)
- Disabled — Disables Hyper-Threading Technology when using other operating systems.

Thermal Management 2

- Enabled — Enable Thermal Management 2 function.
- Disabled — Disable this function. (Default value)

Adjacent Cache Line Prefetch

- Enabled — Processor will fetch both cache lines when it requires data that is not currently inits cache. (Defualt value)
- Disabled — Processor will only fetch the cache line that contains the data currently required by the processor.

Set Max Ext CPUID = 3

Set MAX CPUID extended function value to 3.

- Enabled — Enable Set Max Ext CPUID = 3 function.
- Disabled — Disable this function. (Default value)

Peripheral Configuration

PhoenixBIOS Setup Utility		
Peripheral Configuration		Item Specific Help
Serial Port A	[Enabled]	
Base I/O address/IRQ	[3F8/IRQ4]	
Serial Port B	[Enabled]	
Base I/O address/IRQ	[2F8/IRQ3]	
Parallel Port	[Enabled]	
Mode	[Bi-directional]	
Base I/O addreee	[378]	
Floppy disk controller	[Enabld]	
Floppy check	[Disabld]	
Parallel ATA	[Both]	
Serial ATA	[Enabled]	
Native Mode Operation	[Auto]	
F1: Help ↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit ←→: Select Menu	Enter: Select ▸ Sub-Menu	F10: Save&Exit

Figure 2-4: Peripheral Configuration

☞Serial Port A

This allows users to configure serial prot A by using this option.

- Disabled Disable the configuration.
- Enabled Enable the configuration (Default value)

▸ Base I/O Address/IRQ

- 3F8/IRQ4 Set IO address to 3F8. (Default value)
- 2F8/IRQ3 Set IO address to 2F8.
- 3E8/IRQ4 Set IO address to 3E8.
- 2E8/IRQ3 Set IO address to 2E8.

Serial Port B

This allows users to configure serial prot B by using this option.

- Disabled — Disable the configuration.
- Enabled — Enable the configuration (Default value)

- Base I/O Address/IRQ
  - 3F8/IRQ4 — Set IO address to 3F8.
  - 2F8/IRQ3 — Set IO address to 2F8. (Default value)
  - 3E8/IRQ4 — Set IO address to 3E8.
  - 2E8/IRQ3 — Set IO address to 2E8.

Parallel Port

This allows users to configure parallel port by using this option.

- Enabled — Enable the configuration. (Default value)
- Disabled — Disable the configuration.

- Mode

This option allows user to set Parallel Port transfer mode.

- EPP — Using Parallel port as Enhanced Parallel Port. (Default)
- Bi-directional — Use this setting to support bi-directional transfers on the parallel port.
- ECP — Using Parallel port as Extended Capabilities Port.

- Base I/O Address
  - 378 — Set IO address to 378
  - 278 — Set IO address to 278.

Floppy disk controller

Enabled	Enable the floppy disk controller. (Default value)
Disabled	Disable the device.

Floppy Check

Enabled	Enable the device to verify floppy typer when system boot.
Disabled	Disable the this function. (Default value)

Parallel ATA

Disabled	Disable the device.
Both	Select both Channel 0 and Channel 1 as Parallel ATA. (Default value)
Channel 0	Select both Channel 0 as Parallel ATA.
Channel1	Select both Channel 1 as Parallel ATA.

Serial ATA

Enabled	Enable Serial ATA device. (Default value)
Disabled	Disable the Serial ATA.

Native Mode Operation

This option allows user to set the native mode for ATA function.

Note that certain OS is not supported under Native Mode.

Auto	Auto detected. (Default value)
Serial ATA	Set Native mode to Serial ATA.
Parallel ATA	Set Native mode to Parallel ATA.

Reset Configuration Data

- Yes — Clear the Extended System Configuration Data (ESCD) area.
- No — Disable this function. (default value)

Clk Gen Spread Spectrum

- Enabled — Enable ClkGen Spread Spectrum.
- Disabled — Disabled this function. (Default value)

System After AC Back

Set the mode od operation if an AC/Power loss occurs.

- Power On — Power on system without pressing power button.
- Stay Off — Keep the power off until the power button is pressed.
- Pre- State — Set system to the last sate when AC power is removed. Do not power on system when AC power is back. (Default value)

Extended Memory Testing

Determine which type of tests will be performed extended memory. (above 1M)

- Enabled — Enable Extended Memory Testing. (Default value)
- Disabled — Disable this function.

Network Server

- Enabled — System will be secured at boot to prevent tampering during network operation. (Default value)
- Disabled — Disable this function.

Clear Case Open Log

Please [Enter] to clear case open logs.

Security

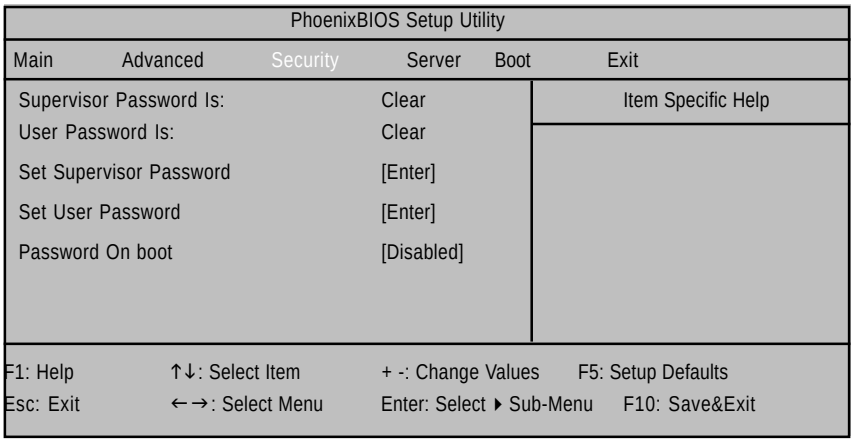

PhoenixBIOS Setup Utility
Main Advanced Security Server Boot Exit
Supervisor Password Is: Clear
User Password Is: Clear
Set Supervisor Password [Enter]
Set User Password [Enter]
Password On boot [Disabled]
Item Specific Help
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults
Esc: Exit ←→: Select Menu Enter: Select ▸ Sub-Menu F10: Save&Exit

Figure 3: Security

About This Section: Security

In this section, user can set either supervisor or user passwords, or both for different level of password securities. In addition, user also can set the virus protection for boot sector.

Set Supervisor Password

You can install and change this options for the setup menus. Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password or press <Enter> key to disable this option.

Set User Password

You can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password.

Password on boot

Password entering will be required when system on boot.

- Enabled — Requries entering password when system on boot.
- Disabled — Disable this function. (Default value)

Server

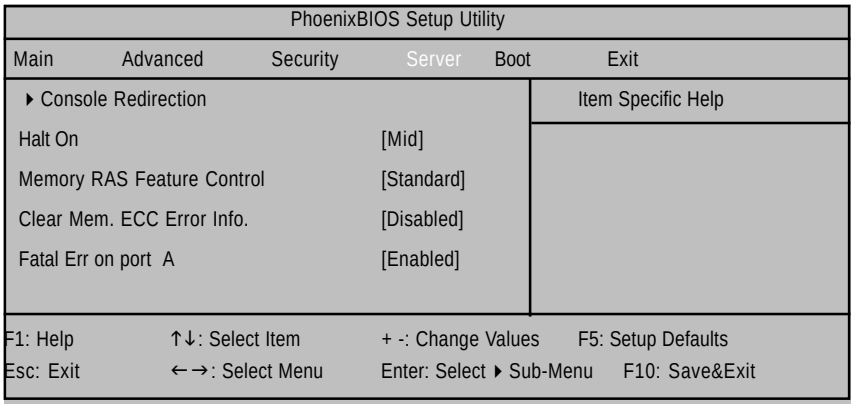

PhoenixBIOS Setup Utility
Main Advanced Security Server Boot Exit
Console Redirection
Item Specific Help
Halt On [Mid]
Memory RAS Feature Control [Standard]
Clear Mem. ECC Error Info. [Disabled]
Fatal Err on port A [Enabled]
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults
Esc: Exit ←→: Select Menu Enter: Select ▸ Sub-Menu F10: Save&Exit

Figure 4: Server

Console Redirection

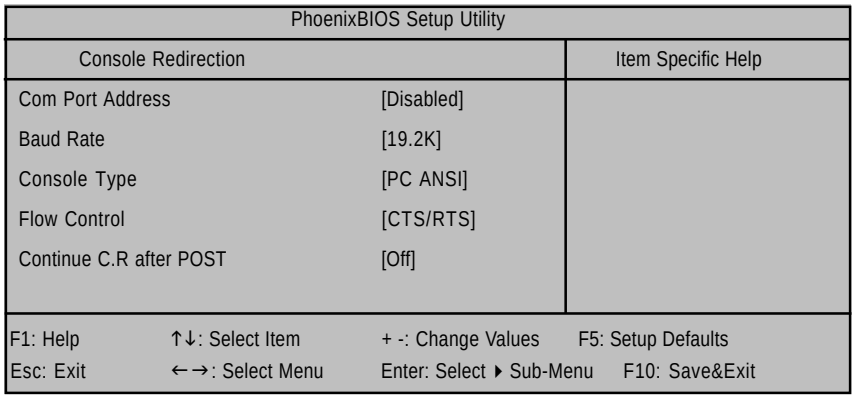

PhoenixBIOS Setup Utility
Console Redirection
Item Specific Help
Com Port Address [Disabled]
Baud Rate [19.2K]
Console Type [PC ANSI]
Flow Control [CTS/RTS]
Continue C.R after POST [Off]
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults
Esc: Exit ←→: Select Menu Enter: Select ▸ Sub-Menu F10: Save&Exit

Figure 4-1: Console Redirection

Com Port Address

If this option is set to enabled, it will use a port on the motherboard.

- On-board COMA — Use COMA as he COM port address.
- On-board COMB — Use COMB as he COM port address.
- Disabled — Disable this function. (Default value)

Baud Rate

This option allows user to set the specified baud rate.

- Options — 300, 1200, 2400, 9600, 19.2K, 38.4K, 57.6K, 115.2K.

Console Type

This option allows user to select the specified console type. This is defined by IEEE. PC-ANSI is the standard PC-type terminal. Note that for VT100+, you must select English as your languuage. And VT-UTF8 uses unicode.

- Options — vt100, vt100+, vt100 8bit, PC ANSI 7bit, PC-ANSI, VT-UTF8.

Flow Control

Enables Flow Control when EMP is dahring the same serial port as console redirection, the flow control must be set to CTS/RTS or CTS/RTS+CD depending on whether a modem is used.

- None — Not supported.
- XON/OFF — Software control.
- CTS/RTS — Hardware control. (Default values)

Continue C.R. after POST

This option allows user to enable console redirection after O.S has loaded.

- On — Enable console redirection after O.S has loaded.
- Off — Disable this function. (Default value)

Halt On

The category determines whether the computer will stop if an error is detected during power up.

NO Errors	The system boot will not stop for any error that may be detected and you will be prompted.
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
Mid	The system boot will not stop for a keyboard or disk error; it will stop for all other errors. (Default value)

Memory RAS Feature Control

Select specified features for DIMMs. Sparing or Memory Mirroring.

Standard	Select Standard as Memory RAS Feature. (Default value)
Sparing	This feature allows user to uses a spare online bank to provide DIMM fail-over capabilities when a pre-defined threshold of single-bit correctable errors is reached.

Clear Mem. ECC Error Info

Enabled	Enable Clear memory ECC error information function.
Disabled	Disable this function. (Default value)

Fatal Error on port A

Enabled	Enable Fatal Erre on port A. (Default value)
Disabled	Disable this function.

Please note that the following item will be shown when IPMI card is populated

Clear all Event Log

Press [Enter], system will clear all event log.

Log POST System Event

- Enabled — Log system event when system boot. (Default value)
- Disabled — Disable this function.

BMC action for IERR

- No action — Do not take any action. (Default value)
- Hard Reset — System reboot automatically, but AC power is supplied.
- Power Cycle — System powering dowm for 5 seconds than rebooting.

Triger of CPU reduction

This function provide user to select the CPU reduction situation. This function is supported when dual CPUs operating.

- IERR & Thermal — CPU reduction when IERR occuring and system overheating. (Default value)
- Thermal Trip — CPU reduction when system overheat.
- IERR — CPU reduction when IERR occurs.
- Disabled — Disable this function.

IPMI LED Clear:

Press[Enter] to clear IPMI LED.

Boot

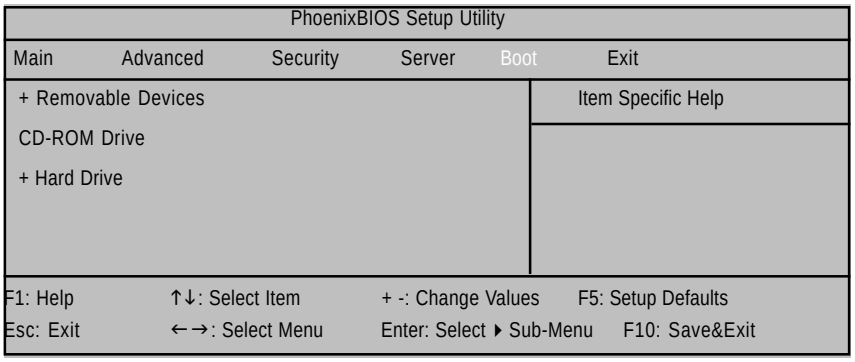

PhoenixBIOS Setup Utility
Main Advanced Security Server Boot Exit
+ Removable Devices
CD-ROM Drive
+ Hard Drive
Item Specific Help
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults
Esc: Exit ←→: Select Menu Enter: Select ▸ Sub-Menu F10: Save&Exit

Figure 5: Boot

About This Section: Boot

The "Boot" menu allows user to select among four possible types of boot devices listed using the up and down arrow keys. By applying <+> and <Space> key, you can promote devices and by using the <-> key, you can demote devices. Promotion or demotion of devices alerts the priority that the system uses to search for boot device on system power on.

Boot Device Priority

- Removable Device / Hard Drive / CD-ROM Drive/

These three fields determines which type of device the system attempt to boot from after PhoenixBIOS Post completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

Exit

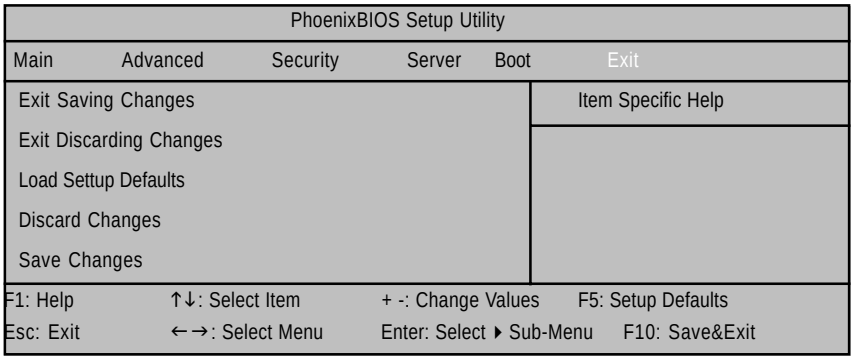


Figure 6: Exit

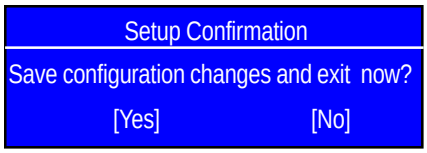
About This Section: Exit

Once you have changed all of the set values in the BIOS setup, you should save your chnages and exit BIOS setup program. Select "Exit" from the menu bar, to display the following sub-menu.

- Exit Saving Changes
- Exit Discarding Changes
- Load Settup Default
- Discard Change
- Save Changes

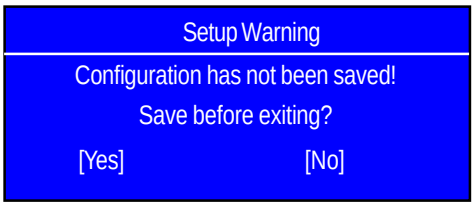
Exit Saving Changes

This option allows user to exit system setup with saving the changes.
Press <Enter> on this item to ask for the following confirmation message:
Pressing 'Y' to store all the present setting values tha user made in this time into CMOS.
Therefore, whenyou boot up your computer next time, the BIOS will
re-configure your system according data in CMOS.



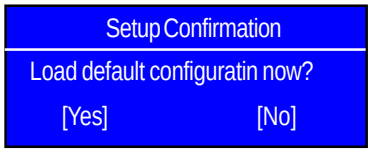
Exit Discarding Changes

This option allows user to exit system setup without changing any
previous settings values in CMOS. The previous selection remain in effect.
This will exit the Setup Utility and restart your compuetr when selecting this option.
Press <Enter> on this item to ask for confirmation message.



Load Settup Defaults

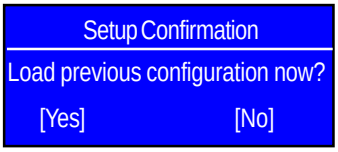
This option allows user to load default values for all setup items.
When you press <Enter> on this item, you will get a confirmation dialog box with a message
as below:



Discard Changes

This option allows user to load previos values from CMOS for all setup item.

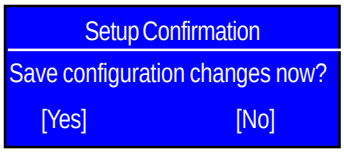
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Save Changes

This option allows user to save setup dat ato CMOS.

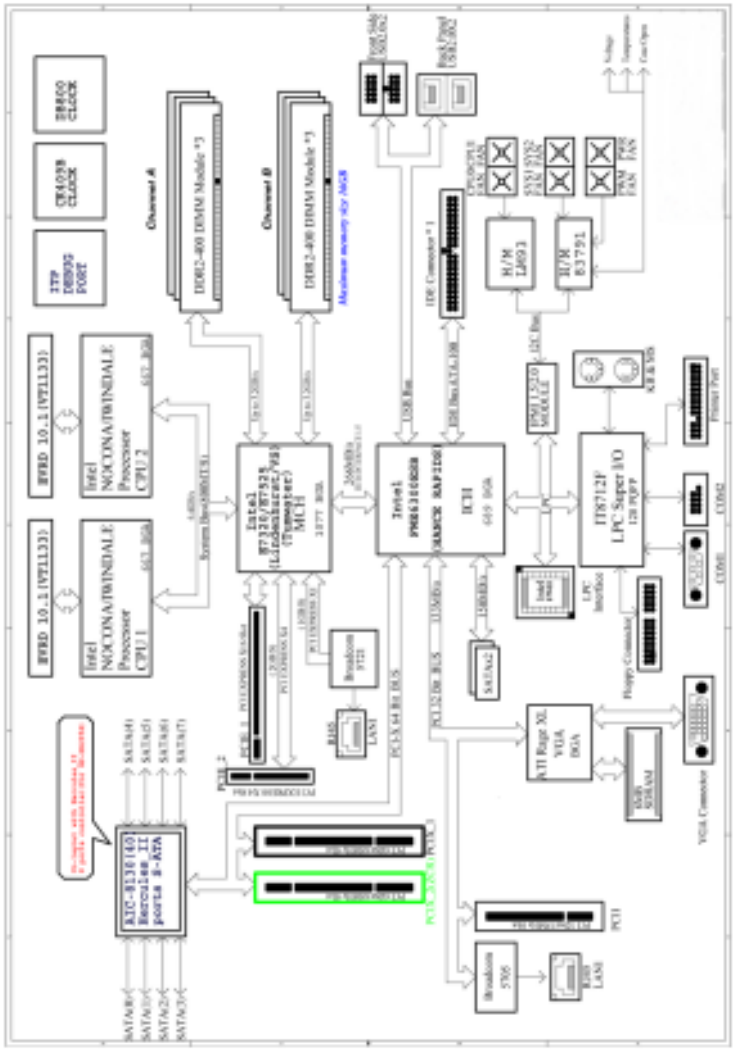
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



Press [Yes] to save setup daya to CMOS.

Chapter 4 Technical Reference

Block Diagram



Chapter 5 Driver Installation

A. Intel Chipset Software Installation Utility

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

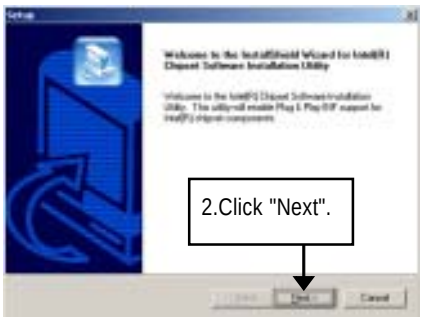
Installation Procedures:

1. The CD auto run program starts, Double click on “Intel Chipset Software Installation Utility” to start the chipset installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3. Setup completed, click “Finish” to restart your computer.

Auto Run windows

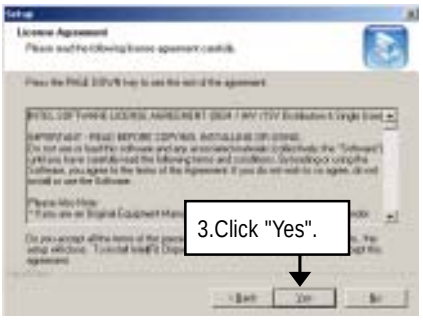
(1)

Setup Wizard



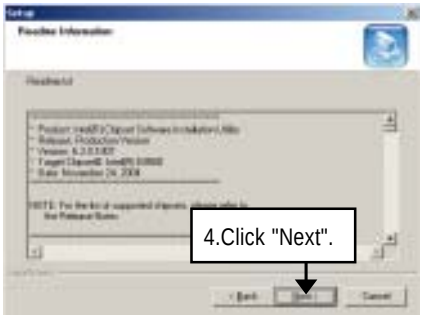
(2)

License Aggremment



(3)

Readme Information



(4)

Installation Completed

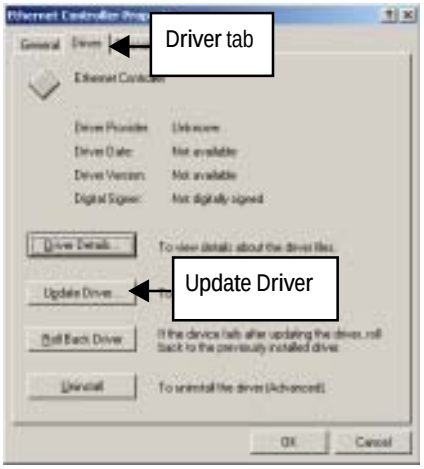
5. Installation completed, Click "Finish" to restart computer.

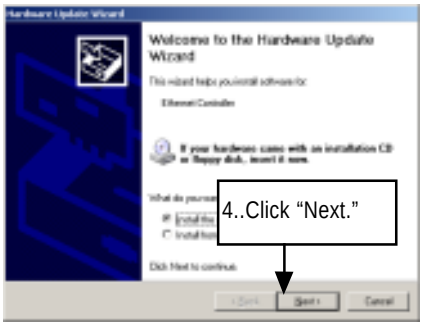
(5)

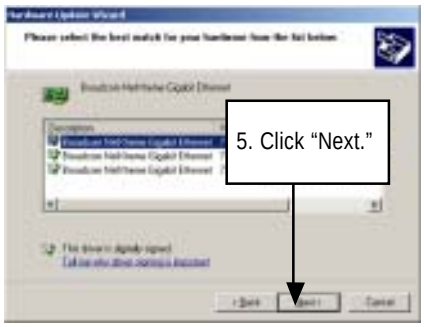
B. Broadcom BCM5705/5721 Driver Installation

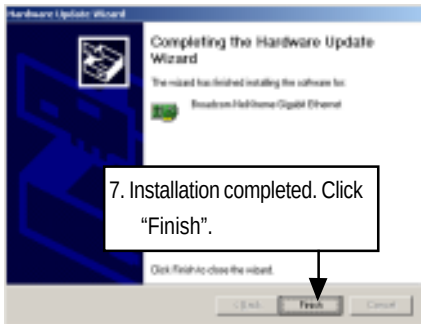
Installation Procedures:

1. Insert the driver CD-title that came with your motherboard into your CD-ROM driver.
2. Right click My Computer and select Manage.
3. Click on Device Manager.
4. On the right side of windows, right click on Ethernet Controller and select Properties.
5. Select Driver Tab, and click on Update Driver tab.
6. Select Install the software automatically, then click Next.
7. Hardware Update Wizard widow pops up. Click Next.
8. Installation completed, click Finish.






5. Click “Next.”


Completing the Hardware Update Wizard
7. Installation completed. Click “Finish”.

C. Adapetc 8130 Host Raid Driver Installation

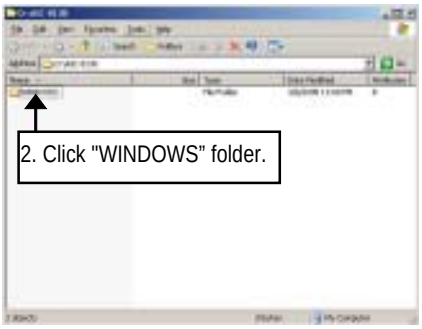
Installation Procedures:

1. The CD auto run program starts, Double click on “Adaptec 8130 Host Raid”.
2. Click on WINDOWS folder.
3. Copy all files to the floppy disk.
4. Reboot the system.
5. Insert the floppy disk and press F6 when system boot.

Auto Run windows

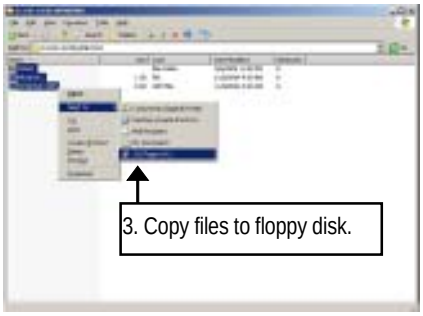
(1)

Host RAID Driver Installation



(2)

Copy Files



(3)

D. DirectX 9.0C Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Installation Procedures:

1. The CD auto run program starts, Double click on “Directx9.0C” to start the installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3.Setup completed, click “Finish” to restart your computer.

Auto Run windows

(1)

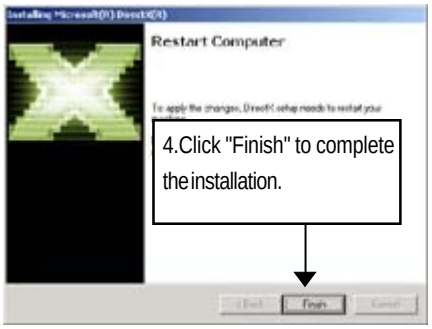
License Agreement

(2)

Starting Installaiton

(3)

Installaiton Wizard completed



(4)

E. Adaptec Storage Manager Utility Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

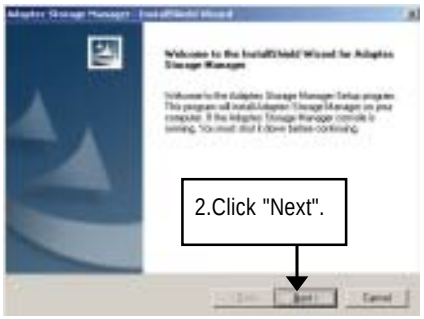
Installation Procedures:

1. The CD auto run program starts, **Double click** on "Adaptec Storage Manager" to start the installation.
2. Then, a series of installation wizards appear. Follow up the wizards to install the drivers.
3. Setup completed, click "Finish" to restart your computer.

Auto Run windows

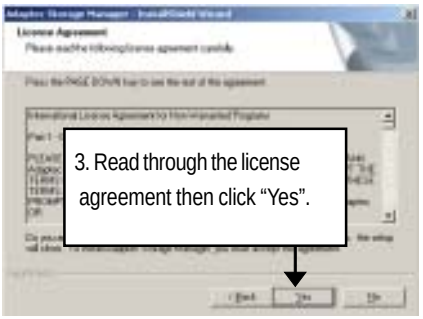
(1)

Install Shield Wizard



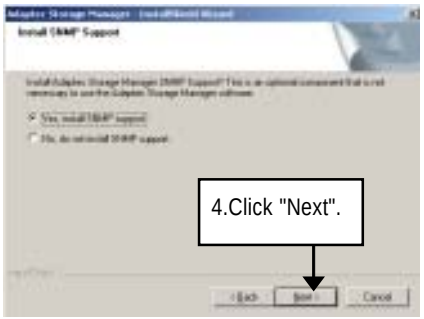
(2)

License Agreement



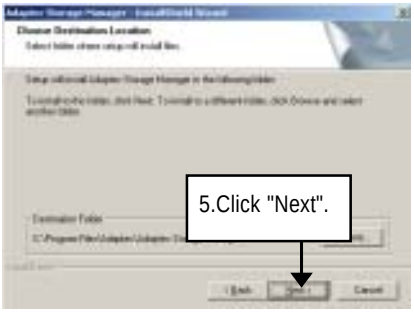
(3)

Install SNMP Install



(4)

Choose Destination Location

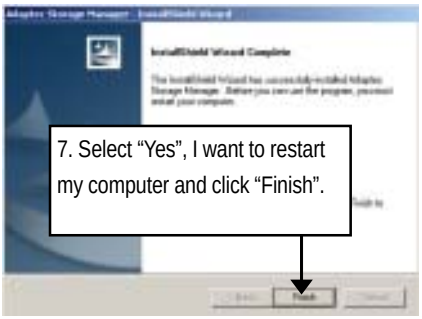


(5)

Install SNMP Install

(6)

Installation Completed



(7)

Chapter 6 Appendix

Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BBS	BIOS Boot Specification
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

Acronyms	Meaning
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID

Technical Support/RMA Sheet

Customer/Country:	Company:	Phone No.:
Contact Person:	E-mail Add. :	

Model name/Lot Number:	PCB revision:
BIOS version:	O.S./A.S.:

Hardware Configuration	Mfs.	Model name	Size:	Driver/Utility:
CPU				
Memory Brand				
Video Card				
Audio Card				
HDD				
CD-ROM / DVD-ROM				
Modem				
Network				
AMR / CNR				
Keyboard				
Mouse				
Power supply				
Other Device				

Problem Description: